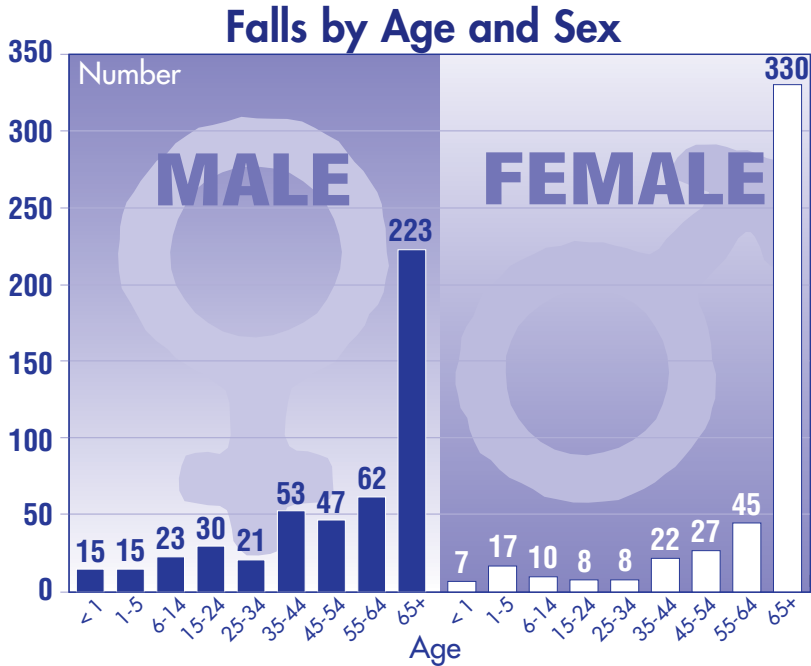
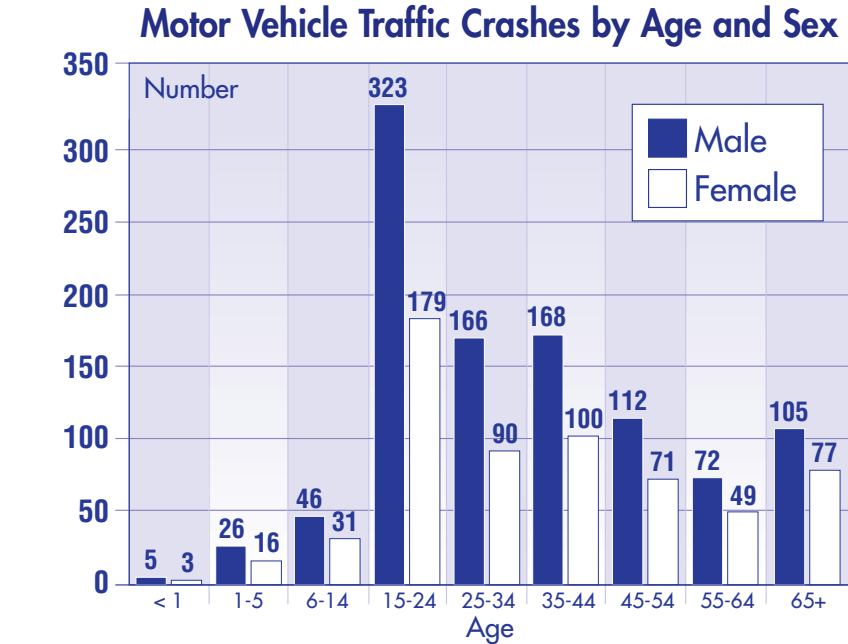


Overall females are less likely than males to suffer a fall related head injury through age 64. Of the total traumatic brain injuries due to falls, 57.4 percent were from the age group 65 years old and older. Of the 474 females who suffered a head injury due to a fall, 69.6 percent were 65 years old or older, compared to 45.6 percent of the 489 males.

Approximately 3.7 percent of the accidental falls causing a head injury were work related.

Of the 1,023 males who were involved in a motor vehicle accident, 31.6 percent were ages 15 to 24 years compared to 16.2 percent in ages 25 to 34 years. These two age groups accounted for almost half of the total motor vehicle injuries. For both males (31.6 percent) and females (29.1 percent), there were more injuries in the 15 to 24 year age group than any other group.

Work-related accidents accounted for 1.3 percent of the total motor vehicle accidents. Of the total head injuries from motor vehicle traffic accidents, 8.2 percent resulted in a severe brain injury; 35.1 percent was classified as moderate; 45.6 percent was classified as mild; and the severity for 11.0 percent was undetermined.



When all cases were included, 31.3 percent of the individuals with severe brain injuries were hospitalized more than seven days, compared to 33.1 percent of the individuals with injuries considered to be moderate, and 16.4 percent for those with mild injuries. For cases where severity was undetermined, 16.5 percent were hospitalized more than seven days.

When individuals who died are excluded from the analysis, 89.2 percent of people with severe brain injuries were hospitalized more than seven days, while the percent of individuals with lesser injuries showed little change.

Of the cases with hospital stays of more than 7 days, 57.2 percent were considered to have moderate brain injuries.

The length of stay could be affected by other injuries that occurred during the accident. The severity index by itself should not be used as a predictor or indicator of length of stay.

Severity of Injury by Length of Stay										
Length of Stay	Total	Died	Severe		Moderate		Mild		Undetermined	
			Total	Died	Total	Died	Total	Died	Total	Died
Less than 24 hrs.	114	114	71	71	16	16	3	3	24	24
1 Day	647	72	47	45	168	24	332	2	100	1
2 Days	585	32	21	21	206	9	282	2	76	0
3 Days	411	14	9	7	173	6	160	0	69	1
4 Days	278	16	9	9	134	5	109	0	26	2
5 Days	217	13	3	2	115	11	72	0	27	0
6 Days	161	7	6	6	83	0	54	0	18	1
7 Days	134	11	7	5	67	5	45	1	15	0
8 to 14 Days	454	35	22	15	258	14	126	2	48	4
15 to 21 Days	160	8	13	2	101	6	38	0	8	0
22 to 28 Days	98	4	17	1	53	2	22	0	6	1
29 Days or more	122	7	27	3	65	2	22	1	8	1
TOTAL	3381	333	252	187	1439	100	1265	11	425	35

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# Tennessee Traumatic Brain Injury

## 2004

January - June

*A traumatic brain injury is defined as an acquired injury to the brain caused by an external physical force that may result in total or partial disability or impairment.*

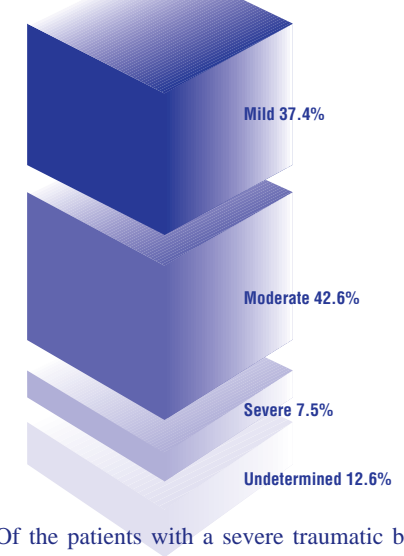
Tennessee Department of Health  
Policy, Planning, and Assessment  
Health Statistics  
January - June 2004

# Introduction

The enabling legislation establishing the traumatic brain injury registry was signed into law in May, 1993. As written, the initial legislation prohibited health care providers from reporting case information without written consent of the patient. An amendment was passed in May, 1996 resolving this issue. Data collection officially began with patients discharged during 1996. The hospitals report information on inpatients, with specific ICD-9 CM diagnosis codes, whose admission and discharge dates are different (where length of stay was 24 hours or more) and for those individuals who died. Patients seen in emergency rooms who were sent home the same day or length of stay was less than 24 hours are not included in the registry.

A traumatic brain injury is defined as an acquired injury to the brain caused by an external physical force that may result in total or partial disability or impairment.

## Injuries by Severity



Of the patients with a severe traumatic brain injury 74.2 percent died. This category represents 56.2 percent of the total patients that died.

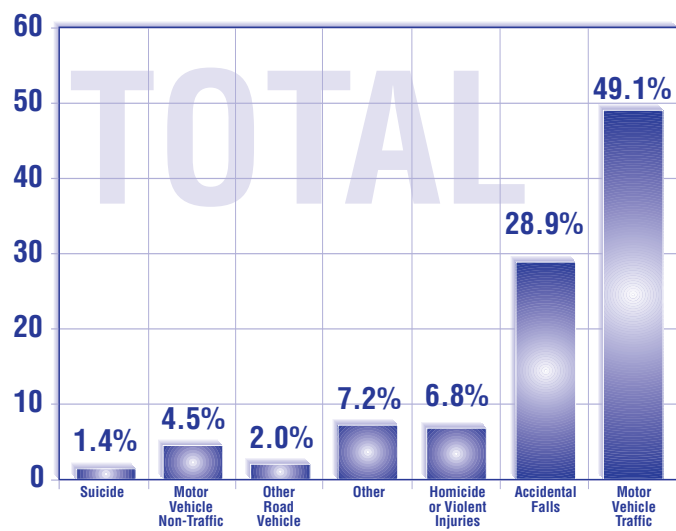
For patients with a moderate brain injury (excluding deaths) 62.6 percent were discharged for home care requiring non-skilled or some degree of skilled assistance. Those discharged to residential facilities with or without skilled nursing services accounted for 14.3 percent and 17.8 percent were discharged to an inpatient rehabilitation facility.

Excluding deaths, 83.5 percent of the patients with a mild brain injury were discharged to home care requiring non-skilled or some degree of skilled assistance.

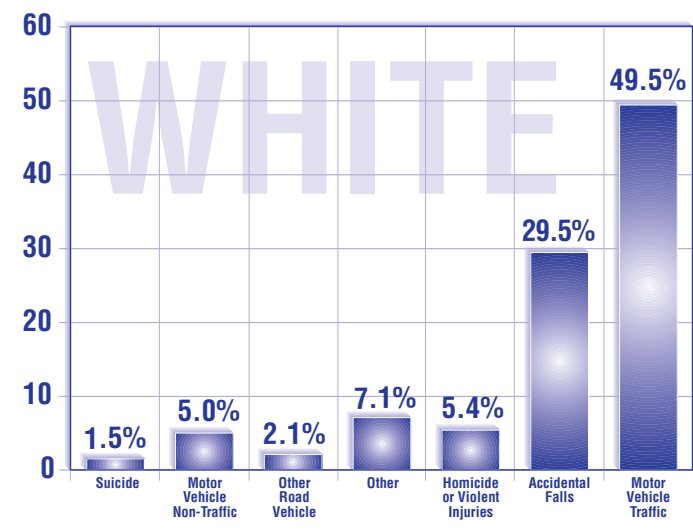
### Hospital Discharge Status by Severity of Injury

Discharge Status	Total	Severe	Moderate	Mild	Undetermined
Transferred to acute care hospital	48	3	25	18	2
Home - self care	1,906	8	714	917	267
Home - requiring non-skilled assistance	130	0	53	70	7
Home - health services or outpatient rehab	162	1	71	60	30
Residential facility w/o skilled nursing	32	1	21	6	4
Residential facility with skilled nursing	295	25	170	63	37
Inpatient rehab facility	392	24	239	99	30
Patient died	333	187	100	11	35
Other	83	3	46	21	13
Total	3,381	252	1,439	1,265	425

An external cause of injury permits the classification of environmental events, circumstances, and the conditions as the cause of injury. An external cause of injury was reported for 98.6% (3,335) of the 3,381 persons treated in Tennessee. The data presented by race represents 2,861 white and 311 black cases.

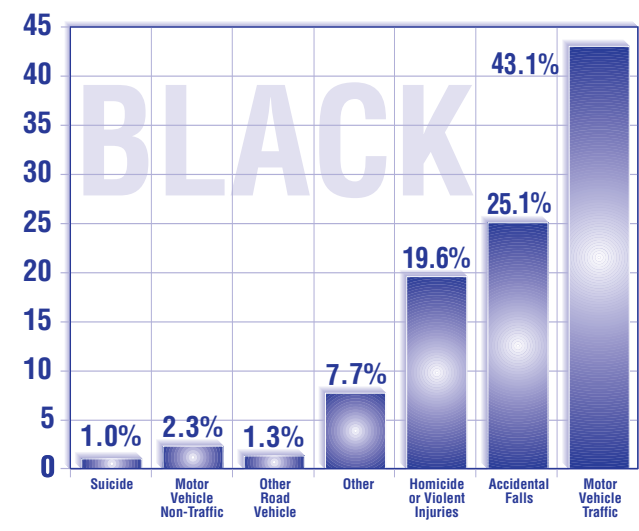


The leading cause of traumatic brain injuries, 49.1 percent (includes only cases with external cause of injury reported) was motor vehicle traffic accidents. Accidental falls accounted for 28.9 percent. Homicide or violent deaths, which includes injury undetermined whether accidentally or purposely inflicted, and legal intervention accounted for 6.8 percent of the total injuries.



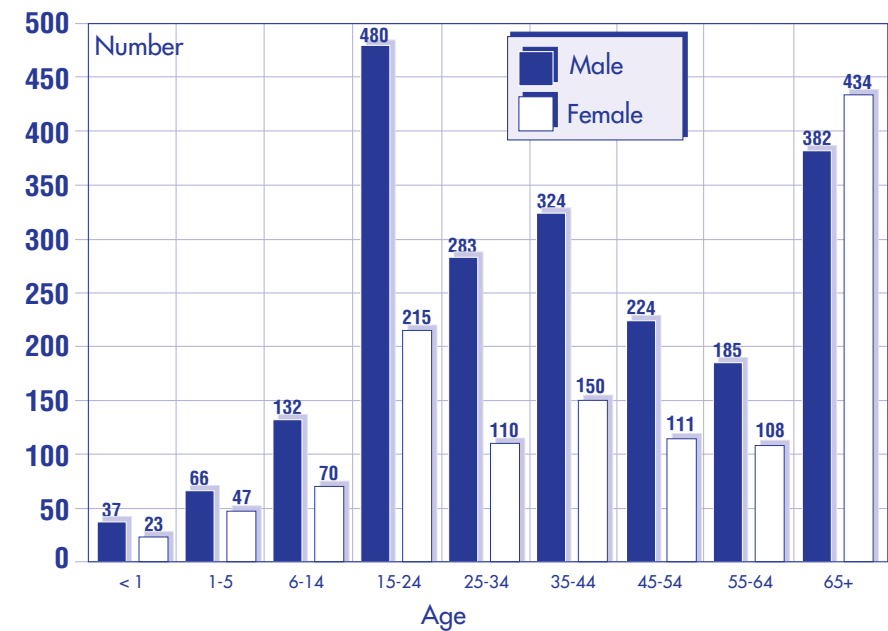
For whites, the leading cause of traumatic brain injury was motor vehicle traffic accidents with 49.5 percent. The second leading cause of injury was accidental falls with 29.5 percent. The third leading cause was other accidents at 7.1 percent.

The leading cause of head injury for blacks (43.1 percent) was motor vehicle traffic accidents. Accidental falls were the second leading cause of injury with 25.1 percent. The third leading cause of injury for blacks was homicide or violent injuries with 19.6 percent.



## Injuries by Age and Sex

For all ages except 65 and older, males are more likely to suffer a head injury than females. This is primarily due to traffic accidents. At age 65 and older, females experience more injuries due to falls. Further analysis of the data revealed that 41.7 percent of the (60) patients less than one year of age suffered a brain injury due to homicide or an injury purposely inflicted by other persons.



Based on the ICD-9-CM diagnosis codes, 37.4 percent of all patients experienced a “mild” injury. The injuries considered “moderate” made up 42.6 percent while 7.5 percent were considered “severe”. Four hundred twenty-five (425) cases, or 12.6 percent had an insufficient clinical description and the severity for these cases was undetermined.

The severity index is based on the clinical diagnosis of the injury.

Excluding the patients that died, 72.1 percent of the patients were discharged for home care requiring non-skilled or some degree of skilled assistance. This indicates a tremendous burden on the families and communities of the brain injured survivors.